CLAIMS

1. Hydrokinetic coupling appliance (10), in particular for a motor vehicle, of the type comprising:

- casing (1, 2) formed from a first shell (1) which rotationally connects a driving shaft (A1) and an impeller wheel (11);

- a turbine wheel (12) rotationally fixed, by a connection without play, to a turbine hub (18) which is able to be rotationally connected to a driven shaft (A2);

- a clutch (16) locking the coupling of the driving (A1) and driven (A2) shafts, comprising a piston (76), able to move axially in order to disengageably connect a second shell (2) of the casing to the driven shaft (A2), clamping at least one friction disc (80) rotationally fixed firstly to the second casing shell (2) by means of a first connecting piece (82) and secondly to the input element (26, 28) of a damping device (20) by means of a second connecting piece (84);

of the type in which the damping device (20) comprises circumferentially acting elastic members (50) interposed between two guide washers (26, 28) forming the input element and a damper plate (29) forming the output element and which is rotationally fixed to the driven shaft (A2), the input and output elements being rotationally connected with a capacity for angular movement which is limited by stop means (38), and of the type comprising a channel (V1) supplying the casing with fluid and a channel discharging (V2) the fluid,

characterised in that the damping device (20) comprises means (100, 110, 116, 120, 138, 140) for restricting the circulation of the fluid in a roughly radial direction, at least inside the front axial space (E1), which is situated between the front guide washer (28) and the damper plate (29), so as to promote the circulation of fluid, from the supply channel (V1) to the discharge channel (V2), through the lock-up clutch (16).

2. Appliance (10) according to the preceding claim, characterised in that the means for restricting the circulation of fluid comprise at least one axial-effect front elastic washer (100) which is interposed axially between the damper plate (29) and the front guide washer (28), so as to form a barrier against the radial circulation of the fluid inside the front axial space (E1) of the damping device (20).

3. Appliance (10) according to Claim 1 or 2, characterised in that the means for restricting the circulation of fluid comprise at least one axial-effect rear elastic washer (110) which is interposed axially between the damper plate (29) and a facing radial surface towards the rear, and which is disposed radially inside, with respect to the elastic members (50), so as to form a barrier against the radial circulation of the fluid inside the rear axial space (E2), situated between the damper plate (29) and the rear guide washer (29).

4. Appliance (10) according to either one of Claims 2 or 3, characterised in that each elastic washer (100, 110) is a frustoconical washer.

5. Appliance (10) according to any one of Claims 2 to 4, characterised in that the elastic washer (100, 110) is centred with respect to the axis by means of a complementary centring

profile (108, 112, 114, 118) which is produced in the associated guide washer (26, 28), or in the damper plate (29).

6. Appliance (10) according to the preceding claim, characterised in that the centring profile comprises several strikes (118) forming, on the associated guide washer (28) or on the damper plate (29), angularly distributed centring reliefs.

7. Appliance (10) according to any one of the preceding claims, characterised in that the rear guide washer (26) is rotationally fixed to the turbine hub (18).

8. Appliance (10) according to the preceding claim, characterised in that the rear guide washer (26) and the turbine hub (18) are rotationally integral by meshing, by means of teeth (30, 32) which are carried respectively by the internal periphery of the rear guide washer (26) and by the external periphery of the turbine hub (18).

9. Appliance (10) according to Claim 7 or 8, characterised in that the turbine hub (18) comprises a continuous annular radial surface (116) which comes into axial abutment against the rear face of the damper plate (29) so as to prevent the radial circulation of the fluid inside the rear axial space (E2).

10. Appliance (10) according to Claim 7 or 8, taken in combination with Claim 3, characterised in that the rear elastic washer (110) is interposed axially between the damper plate (29) and the front face of the turbine hub (18);

11. Appliance (10) according to the preceding claim, characterised in that the surface (114) of the turbine hub (18)

liable to be in contact with the rear elastic washer (110), and/or the elastic washer (110), is treated with a view to increasing its hardness.

12. Appliance (10) according any one of the preceding claims, characterised in that the central part (54) of the front guide washer (28) and/or the central part (56) of the rear guide washer (26), which is situated in line with the elastic members (50), is solid, by virtue of which the fluid cannot flow in the associated axial space (E1, E2) by passing through the central part (54, 56) of the guide washer (26, 28).

13. Appliance (10) according to the preceding claim, characterised in that the damping device (20) comprises pairs of cups (130, 132) which are arranged in the central parts (54, 56) of the guide washers (26, 28) so as to form abutment surfaces for the circumferentially acting elastic members (50).

14. Appliance (10) according to any one of the preceding claims, characterised in that each guide washer (26, 28) comprises a continuous external peripheral edge (34, 36), and in that the two external edges (34, 36) are adjacent, so as to close off the external periphery of the damping device (20).

15. Appliance (10) according to any one of the preceding claims, characterised in that the external peripheral edge (34) of one of the guide washers (26) is extended axially towards the rear by a deflector (140) which diverts the flow of oil towards the clutch (16).

16. Appliance (10) according to the preceding claim, characterised in that the deflector (140) forms an annular skirt which minimises the axial space between the external

periphery of the damping device (20) and the turbine wheel (12).

17. Appliance (10) according to Claim 15 or 16, characterised in that the deflector (140) is formed by an external radial extension of the rear guide washer (26) in a single piece.

18. Appliance (10) according to any one of the preceding claims, characterised in that the front guide washer (28) and the damper plate (29) each comprise axial drillings (102, 104), which are arranged roughly axially opposite each other, with a view to facilitating the circulation of the flow of oil, which has passed through the clutch (16), to the discharge channel (V2).

19. Appliance (10) according to any one of the preceding claims, characterised in that the turbine hub (18) comprises axial passages (106), close to its internal periphery, with a view to facilitating the circulation of the flow of oil, which has passed through the clutch (16), to the discharge channel (V2).

20. Appliance (10) according to the preceding claim, characterised in that the axial passages (106) are produced in the form of axial grooves.